

Perth Amboy Brownfield Inventory Final Report



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PROJECT TEAM

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GLOSSARY

KCSL – Known Contaminated Site List; <http://www.nj.gov/dep/srp/kcsnj/>
LSRP – Licensed Site Remediation Professional
RCRA – Resource Conservation Recovery Act
SM – Site Mart; <http://www.njbrownfieldsproperties.com/default.aspx>
SRP – New Jersey Site Remediation Program; <http://www.nj.gov/dep/srp/>
SRRRA – Site Remediation Reform Act

DEFINITIONS

The **Environmental Protection Agency (EPA)** defines a **brownfield** as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant".

A brownfield is defined under NJ state law (N.J.S.A. 58:10B-23.d) as "any former or current commercial or industrial site that is currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of a contaminant."

The Resource Conservation and Recovery Act (**RCRA**), enacted in 1976, is the principal federal law in the United States governing the disposal of solid waste and hazardous waste. For a detailed discussion of provisions of this law see: <https://www.epa.gov/hw/learn-basics-hazardous-waste#cradle>

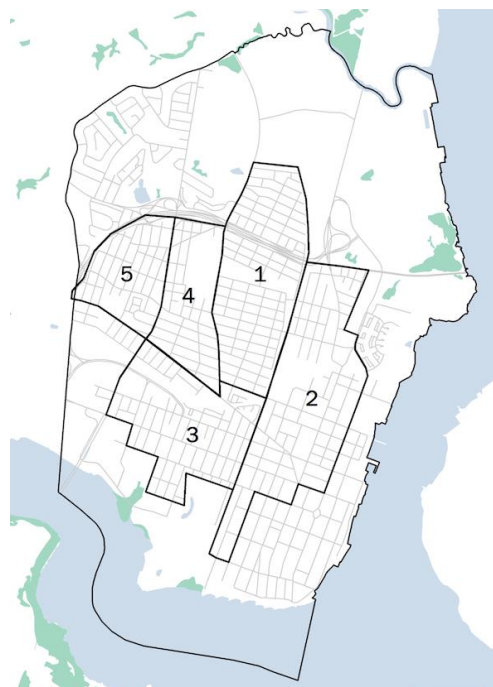
Site Mart is New Jersey's online searchable database for Brownfield properties available for reuse. The site is capable of displaying site statistics, narrative description, and, in the future will have a geographic positioning function and site photographs. The **NJ Brownfields Inventory Website** is a collaboration with private property owners, municipalities and counties to efficiently build a shared database that will represent an inventory of Brownfields properties in New Jersey.

I. BACKGROUND

The Middlesex County Improvement Authority (MCIA) and the City of Perth Amboy, New Jersey are working to develop cost effective and creative strategies to address Perth Amboy's brownfield properties. The City estimates that there are more than 200 brownfield properties in Perth Amboy. The goals of this project were to: 1) create an accurate digital data file for Perth Amboy and MCIA to use in updating existing Brownfield data sources; 2) identify properties that might be brownfields, but that are not currently listed in the state or federal databases; and 3) create digital maps and map layers for use in local and regional landuse planning.

Rutgers University Center for Urban Environmental Sustainability (CUES) completed a field survey that verified the addresses and business names of properties listed in: 1) New Jersey Department of Environmental Protection's (NJDEP) Known Contaminated Site List (KCSL); 2) NJ Office of Planning Advocacy's Brownfields SiteMart; and 3) United States Environmental Protection Agency's (USEPA) Resource Conservation Recovery Act (RCRA) databases. Based on the type of business activities conducted on a site, or observable physical site characteristics, the field survey also identified commercial properties that potentially may be Brownfields, but that are not currently listed in these three databases. Residential parcels were excluded from this analysis, which focused on commercial site uses that might contribute to contamination.

Perth Amboy planning staff divided the city into five priority neighborhoods, covering 1.8 sq. miles (Figure 1). Surveyor teams walked the five neighborhoods over an eight-week period during summer, 2016. The CUES team surveyed 25 Site Mart properties, 76 KCSL sites, 178 RCRA sites, and 10,087 individual parcels within the survey area. Properties listed in the three databases were mapped (Figure 2). Residential and non-Residential properties (Figure 3) were identified; commercial parcels were visually evaluated to determine the potential for contamination based upon the business type and existing site conditions.



This map displays the municipal boundary of Kent, Washington, with various locations marked. The map includes a scale bar (0 to 0.5 miles) and a north arrow. The locations are categorized as follows:

- Municipal Boundary:** Indicated by a thick black line.
- Site Mart:** Indicated by purple diamonds.
- KCSL:** Indicated by pink diamonds.
- RCRA:** Indicated by green diamonds.

The map shows a dense network of streets within the city limits, with the locations of Site Marts, KCsL, and RCRA sites distributed throughout the area. The city is situated near a large body of water, likely Puget Sound, to the west and south.

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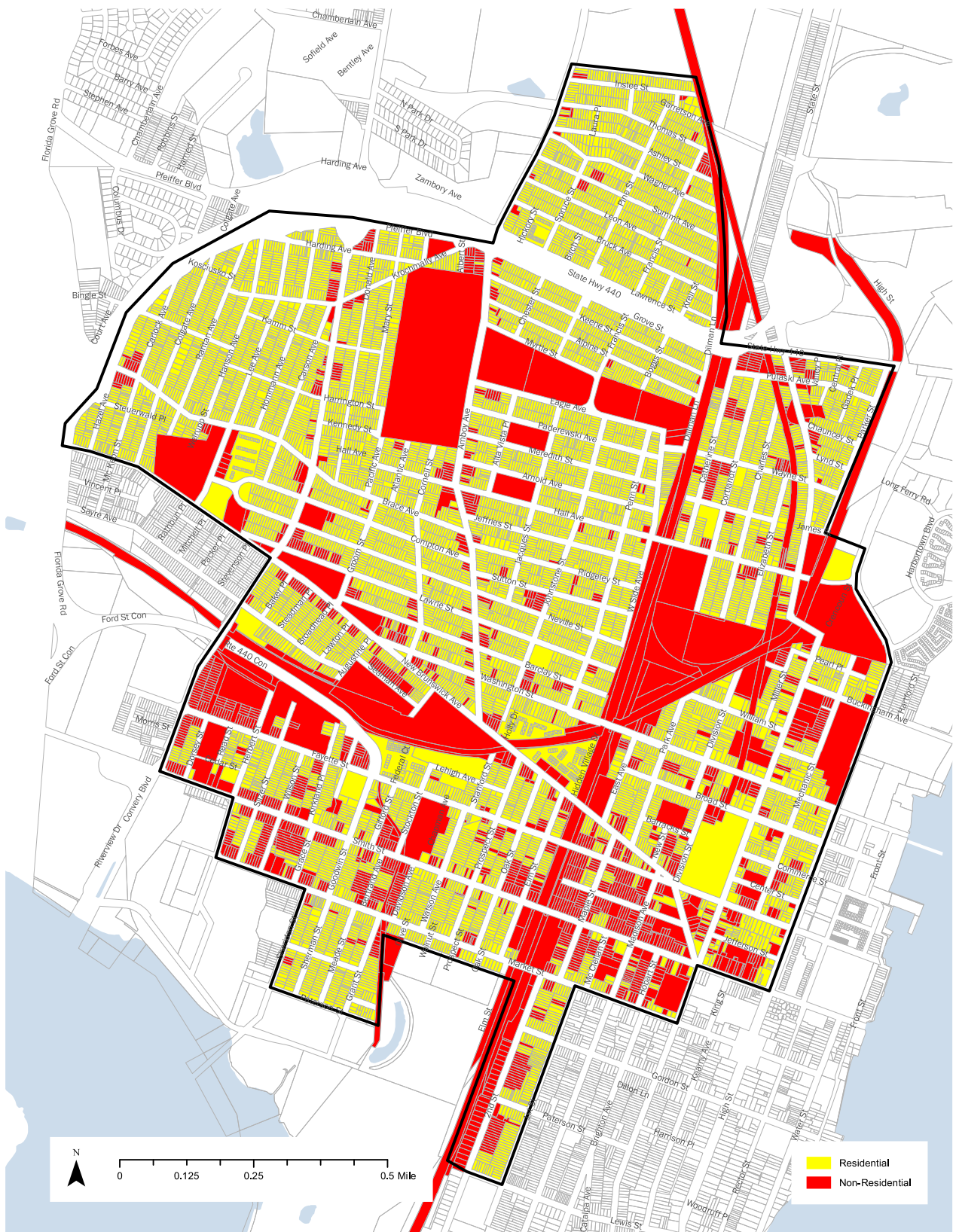


Figure 3. Perth Amboy residential and non-residential parcels surveyed in five defined neighborhoods during summer, 2016.

II. FIELD SURVEY METHODS

Downloading and Processing Data from State and Federal Sources

In order to complete this project, data was downloaded from various State and Federal databases (Data Dictionary, see Appendix I). We first downloaded the municipal boundary and parcel data from NJGIN and MOD IV tax assessor data. Then the parcel data and the tax data were joined in order to view addresses and parcel ownership. RCRA site data was downloaded from the USEPA's Geospatial Data Download Service¹; KCSL sites were downloaded from the NJ Department of Environmental Protection²; and NJ Brownfield Site Mart sites were downloaded from the NJ Office of Planning Advocacy³. When all the data was collected and brought into ArcGIS it was clipped to the boundary of Perth Amboy and placed into a single geodatabase.

Survey Questionnaire

In order to identify potential Brownfield parcels requiring further evaluation, after the data downloads were complete a field survey questionnaire was developed in collaboration with MCIA and the City of Perth Amboy. The questionnaire contained a series of questions related to observable site conditions (complete Survey Questionnaire, see Appendix II), which the surveyors answered for each commercial parcel (Figure 4). After the survey questions were developed they were added as fields (columns) to the parcel data. The data and survey questions were uploaded to ArcGIS Online, and then using ArcMap "Hosted Services" and ArcGIS Online, the data was downloaded to a handheld tablet used by the survey team. During the field survey, the questions appeared as a menu in the ArcGIS Collector application, enabling the surveyors to record relevant site characteristics for each parcel.

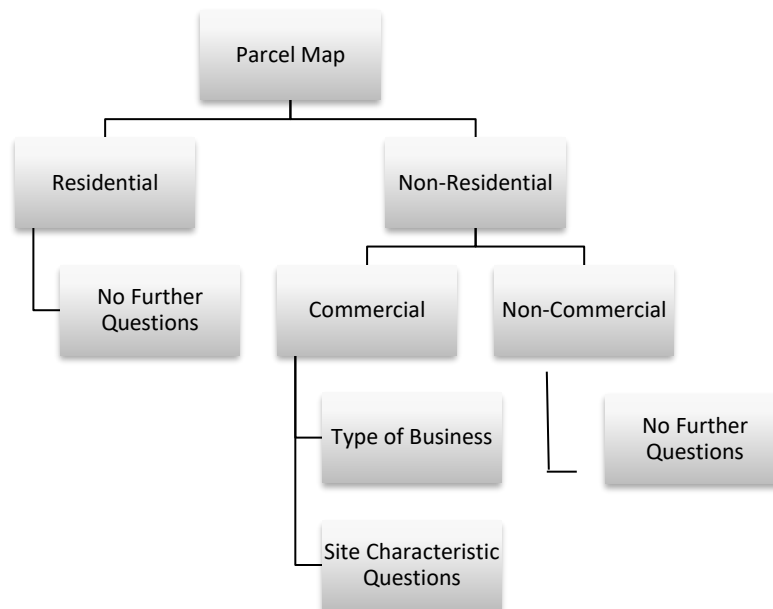


Figure 4. Survey Questionnaire schematic.

¹ <https://www.epa.gov/enviro/geospatial-data-download-service>

² http://njgis.newjersey.opendata.arcgis.com/datasets/6f11f6204ffa40a09527c8205aec4425_7

³ <http://www.nj.gov/state/planning/spc-research-resources-gis.html>

ArcGIS Online and Handhelds

The handheld device allowed the survey team to view: 1) a map of each neighborhood that outlined each parcel; 2) dots identifying the location of each site listed in the three databases; and 3) the survey question menu (Figures 5, 6).

Cancel [Settings] [Map] [Camera] Update

Area
2,536 sq ft

7. If on EPA RCRA, is the address and name accurately listed i... >

RCRA Correction >

8. If on Site Mart, is the site ID, address, and name accurately... >

Site Mart Correction >

9. If on KCSL, is the address and name accurately listed in the... >

KCSL Correction >

10. Is there a sign listing an LSRP? >

11. If #9 is Yes, what is the name of the LSRP? >

13. Is there a structure on the site? >

12. If #9 is Yes, what is the DEP PI number? >

14. If #13 is Yes, Existing Site Conditions – Boarded up windo... >

15. If #13 is Yes, Existing Site Conditions – Exposed wires/str... >

16. Existing Site Conditions – Weeds 2 ft or taller >

17. Existing Site Conditions – Shrubs >

Figure 5. Survey Questions Screen.



Figure 6. Data Collector Map Screen.

III. DATABASE VERIFICATION

The address and business name of all sites listed in the official databases, as well as each parcel within the defined study area, were field verified. Survey teams employed handheld GIS data collectors to compare database information with respect to site address and name of any onsite business. If the field observed address and/or name of the business differed from the database, a correction was entered into the handheld device.

If a commercial parcel was **not** in one of the three databases, the surveyors noted the type of business and existing site conditions. Based on characteristics listed in the menu questions, sites that might have contamination related to current or previous commercial activities were identified. Digital photographs were also taken when possible. This digital data is accessible on an interactive site map stored on the CUES

website. This Geodatabase is available to the project partners MCIA, Middlesex County GIS office, and the City of Perth Amboy for their further use through a secure Rutgers University website.

In order to assure the accuracy of the data collected during the field survey, post-processing tasks included verification of the database information. Each site in the databases was matched and cross verified with an identified corresponding parcel. If there was an obvious parcel match, but data was missing (example: no business name), further information was obtained using google street view and/or web search capabilities. There were thirty-eight sites listed in at least one of the three databases, but a corresponding parcel could not be identified; these sites were not included in our analysis (for site names see Appendix III).

IV. DATABASE SURVEY RESULTS

DATABASE DISCREPANCIES - Addresses

There were nine sites whose RCRA addresses did not match the property addresses verified in the field survey, and five sites whose KCSL addresses did not match the property addresses verified in the field survey (Tables 1 and 2, Figure 7). No address discrepancies were found in the **Site Mart** data.

TABLE 1. RCRA Address Discrepancies.

RCRA ID	BLOCK	LOT	RCRA ADDRESS	Field Verified Address
110024256874	160	24.01	333 LEHIGH AVE	327 LEHIGH AVE
110022526925	136.01	1	385-387 RECTOR STREET	368 RECTOR ST.
110001534395	15	2	164 SHERIDAN STREET	401 RIVERVIEW DR.
110004157901	224	34	420 PARK AVE	428 PARK AVE.
110004193266	244	2.01	1 CONVERY BLVD	457 High Street
110007928314	87.02	29	SMITH & WILSON ST	475 SMITH ST.
110007952224	378.01	17	ALBERT & KROCKMOLLY ST	479 KROCHMALLY AVE
110004118286	101.02	3	544 FAYETTE ST	536 FAYETTE ST., NAME
110004248528	283	1.01	522 BRACE AVE	606 CONVERY BLVD

TABLE 2. KCSL Address Discrepancies.

SITE ID	BLOCK	LOT	KCSL ADDRESS	Field Verified Address
66979	9	2	SADOWSKI PWY	51 FIRST ST
83280	236	1.01	34 BROAD ST	401-409 RECTOR ST
30536	117	29	FAYETTE & ELM STS	346 PROSPECT ST
5460	73.01	27	351 SMITH ST	358 MARKET ST
5490	56	7.01	273 HIGH ST	270 KING ST

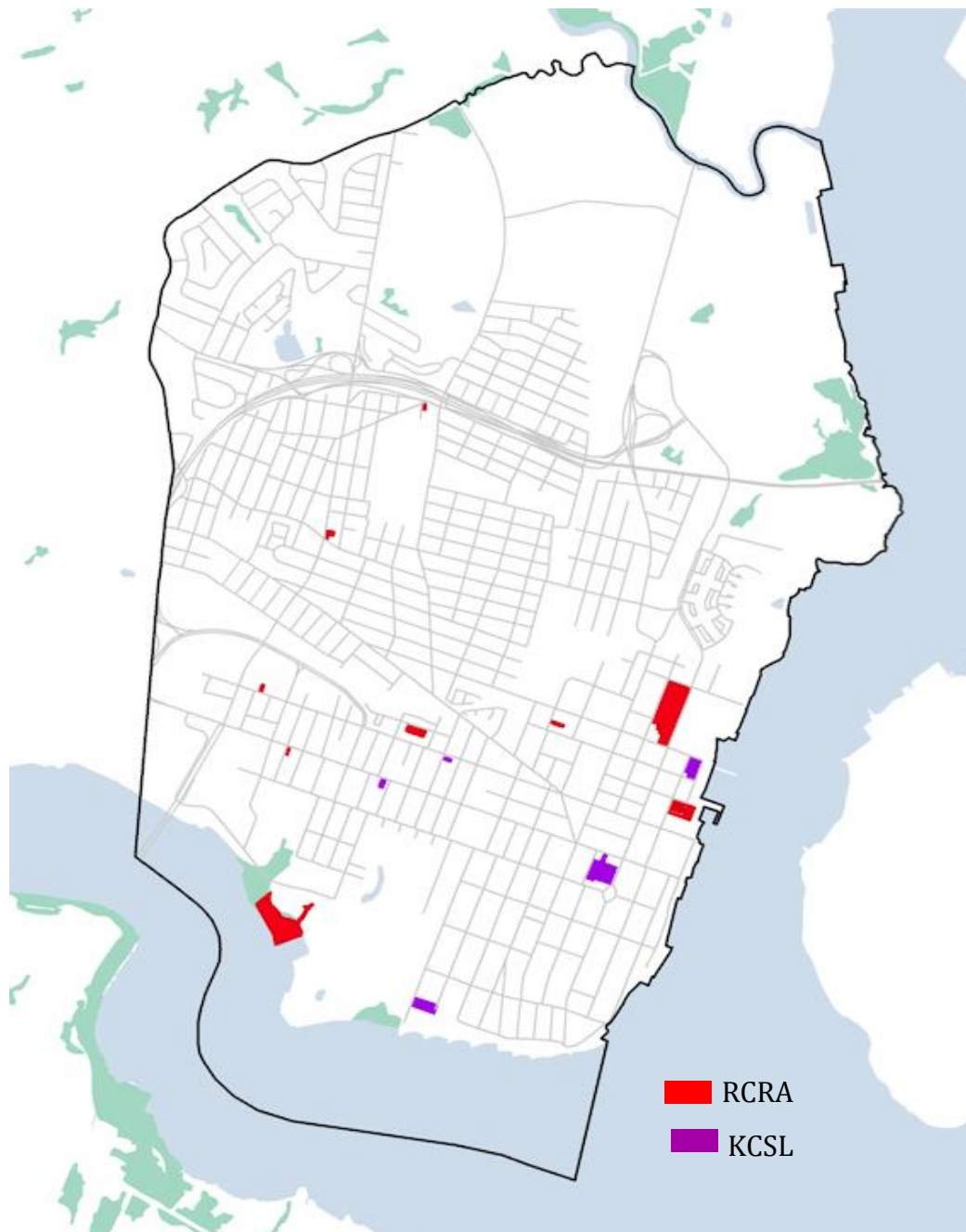


Figure 7. Map of KCSL and RCRA address discrepancies found between the database record and the field survey observation.

DATABASE DISCREPANCIES - Business Names

In a number of cases, the corporate name in the database did not match the name shown on the onsite building. There were forty-two sites in the RCRA database, twenty-six sites in the KCSL database, and twelve sites in the Site Mart database whose names did not match the name onsite. These discrepancies may be due to a corporation doing business under (DBA) a name that differs from its corporate name, or due to a business changing ownership. However, verifying actual site ownership versus the DBA name was beyond the scope of this study, and so we have just noted these name differences in Tables 3, 4, and 5.

TABLE 3. RCRA Business Name Differences

REGISTRY ID	BLOCK	LOT	RCRA NAME	FIELD VERIFIED NAME
110004117839	170	1	BILLS AUTO ELECTRIC	ALL STATE MOTORS
110004119392	322	26	ALPINE SERVICE CENTER	G&G AUTO TRANSMISSION'S PLUS
110004203086	273	20	GULF SERVICE STATION	JERSEY GAS
110014474005	144	27	JOES CLEANERS & TAILORING	BOTANICA ESPIRITU DE AMERICA
110004194489	421	6	R&M AUTO BODY	NATIONWIDE UNIVERSAL AUTO
110004127132	101.04	1	B P SERVICE STATION - FORMER	76
110004170691	227	17	REPUBLIC PETROLEUM CO	ALL STARS ACADEMY
110014833877	126	19	R & S STRAUSS	AMBOY LAUNDROMAT
110001544981	73.01	27	PERTH AMBOY TIRE INC	AMERICAN INDUSTRIAL SUPPLY CORPORATION INC.
110004218089	80	31	REGAL BEDDING CO	CARLITOS CLASSIC AUTO BODY
110004200588	61	1	AUTOMATIC ECONO WASH	CHARLIE'S ECON-O-WASH
110004150631	274	17.0 1	APPLIED REFINERY SERVICES INC	CHECK CASHING
110004146861	393	5.01	JOSEPH CHEVROLET	CHILD PROTECTION AND PERMANENCY OF MIDDLESEX COUNTY
110004233115	58	11	BUSINESS CARDS TOMORROW	DON MANUELS
110004250783	70	8	JV AUTO REPAIRS	E&C AUTO MECHANIC
110004243373	119	2	BANKERS SAVINGS BANK	EDWIN JEWELRY AND BOTANICA ARTE ESPIRITUAL
110014882573	155	22	POLKOWITZ CADILLAC BUICK	EL CLASSICO RESTAURANT AND BILLARDS
110004243809	311	14	MIKES TRANSMISSION SERVICE	EMPIRE AUTI
110004214225	110	1.01	GLASGOW & SONS INC PRODUCTION DIV	FEDERAL HILL TOWNHOMES
110004213958	224	12	ARLEY MERCHANDISE CORP	FLOORING CENTRAL
110007699801	379.04	8	SUNOCO SERVICE STATION #0007 6073	GETTY
110004208991	125	40	MCGUIRE REALTY	GRACELAND ADULT MEDICAL DAY CARE
110004200659	316	34	AMBOY AUTO BROKERS	HILLS TIRE SERVICE
110015677427	35	48	KEATING JAMES J	KING HIGH GARAGE, ADDRESS 158 SECOND ST.
110004182009	186	32	V&H AUTO BODY INC	LIKE NEW AUTO BODY
110004151596	62	22	ONE HOUR MARTINIZING	METROPCS AND MINERVA DRY CLEANER
110004181590	175	13	REX AUTOBODY	NBA COLLISION, LLC AUTOBODY
110004132493	163	1.02	SUNOCO SERVICE STATION	NUNO'S AUTOMOTIVE
110004259542	123	8	YMCA OF RARITAN BAY AREA	PERTH AMBOY PUBLIC LIBRARY, ADDRESS
110004187914	118	1	GISELA DRY CLEANER	PRIMAVERA BAKERY
110004132484	275	6	SUNOCO SERVICE STATION	PROFESSIONAL AUTOMOTIVE SERVICES
110004118632	472.04	3	J & D CITGO	RACEWAY
110004172582	103.01	5	SEVILLE AUTO BODY INC	RAMOS AUTO BODY
110004143150	161	10	RELIABLE REFINISHING CO INC	RELIABLE AUTO BODY
110014355928	75	37	HESS CORPORATION	SPEEDWAY
110015255962	311	8	HESS SERVICE STATION #30513	SPEEDWAY
110004195656	153	4	ENRIQUE AUTO BODY & PAINT	ST. VINCENT DEPAUL
110004162290	103.02	1.01	AMBOY DIESEL SERVICE INC	TROPICAL CHEESE INDUSTRIES, ADDRESS 450

				FAYETTE ST.
110004211852	121	12	NATIONAL STATE BANK	WELLS FARGO
110004197100	163	1.03	VALUE SERVICE STATION	WOROCO
110004185694	399.02	41	BEIRA ALTA AUTO BODY SHOP	XCLUSIVE AUTO BODY
110000322259	478.02	1	CHEVRON PRODUCTS CO - PERTH AMBOY REFINERY	BUCKEYE PARTNERS, LP

TABLE 4. KCSL Business Name Differences

SITE ID	BLOCK	LOT	KCSL NAME	FIELD VERIFIED ADDRESS
56871	123	40	MOUNT CARMEL CHURCH	VIDA CHURCH
55633	206	9	SOBEL BROS INC	THE LOT IS CURRENTLY VACANT
5460	73.01	26	PERTH AMBOY TIRE	ROYAL DINETTE
42914	263	15	CLEMENT FUEL OIL	ROSA'S DELI
45951	182	42	PERTH AMBOY BOE (FORMERLY D BROWN CO)	NOW RESIDENTIAL
5434	103.02	1.01	MENPE CORP	TROPICAL CHEESE INDUSTRIES
85552	136.01	1	ANSELM PROPERTY @ WESTMINSTER REALTY	THE LANDINGS
5503	311	8	HESS STATION 30513	SPEEDWAY
5461	75	37	HESS STATION 30262	SPEEDWAY
175009	161	13	PUBLIC SAFETY COMPLEX	RELIABLE AUTOMOTIVE REPAIR
5470	192	1	MIDDLESEX CNTY VOC & TECH HIGH SC	PARK VIEW APARTMENTS
43582	152	21	R&M AUTO REPAIR	M&B AUTO CARE
66747	155	24	ALBELAIN COSMETICS	LANDI APARTMENTS
5513	273	20	AMBOY CITGO	JERSEY GAS
49677	70	8	JV AUTO REPAIRS	E&C AUTO MECHANIC
24736	183	24	NEXTROM INC	MAGNUM TRANSFORMER CORPORATION
5426	378.01	16	J & N FUEL STOP NJ 0207	SHELL
5494	110	1.01	382 FAYETTE STREET	KAPLAN AT FEDERAL HILL
43753	322	26	ALPINE SERVICE CENTER	G&G AUTO TRANSMISSION'S PLUS
5514	324	15	SHIVA GASOLINE INC	DELTA
5436	181	1	WOROCO III	DELTA GAS
5498	481	1	CHEVRON USA INC	BUCKEYE PARTNERS, LP
145120	68.01	1	SUSSMAN MANUFACTURING	CARLITO'S CLASSIC AUTO BODY
145120	40	1.06	SUSSMAN MANUFACTURING	CARLITO'S CLASSIC AUTO BODY
145120	81	1.01	SUSSMAN MANUFACTURING	AMBOY LIGHTING
5435	207	27	DRY CLEANERS	ALEGRIA RESTAURANT II, GLOW II SALON

TABLE 5. Site Mart Business Name Differences

SITE ID	BLOCK	LOT	SITE MART NAME	FIELD VERIFIED NAME
8087	192	1	MIDDLESEX CNTY VOC & TECH HIGH SC	PARK VIEW APARTMENTS
8105	163	1.02	J P AUTO FIX	NUNO'S AUTOMOTIVE
49677	70	8	Not Available	E&C AUTO MECHANIC
8126	80	31	SUSSMAN MANUFACTURING	CARLITO'S CLASSIC AUTOBODY
8118	58	17	143 TO 145 SMITH INCORPORATED	OASIS HOME, DIABEST, INC, ALEX VIDEO AND PHOTO STUDIO
8109	182	38	PERTH AMBOY BOE (FORMERLY D BROWN CO)	NO NAME POSTED ON SITE
8096	124	19	AMOCO STATION 13397	BP
8122	207	27	445 AMBOY AVENUE	ALEGRIA RESTAURANT II, GLOW II SALON
8107	322	26	ALPINE SERVICE CENTER	G&G AUTO TRANSMISSION'S PLUS
8088, 8092	110	1.01	Not Available	FEDERAL HILK
8106	263	15	CLEMENT FUEL OIL	ROSA'S DELI
8102	211	10	STATE INSULATION CORP	DISTRIBUTION INTERNATIONAL

We note that signs indicating oversight by a Licensed Site Remediation Professional (LSRP) were observed on only two properties.

IV. POTENTIAL BROWNFIELD PARCEL SURVEY RESULTS

Residential versus Non-Residential Properties

Every parcel within the designated Perth Amboy study area was surveyed (total of 10,087 parcels). To ensure every parcel within the study boundary was recorded, an answer to the first menu question (Residential or Non-Residential) was entered for each property (Figure 3). If a parcel was residential the surveyor entered “Residential” and then continued on to the next parcel without answering any further survey questions (Figure 4). Residential properties were eliminated from consideration in this study because the research focus was to ground-truth the three databases and to identify commercial properties that may need to be added to these databases. It would also have been very difficult for the survey teams to observe potential contamination issues related to a residential property, which tend to be associated with underground storage tanks or uses prior to major property redevelopment.

The next Non-residential question categorized properties as “Commercial” or “Non-Commercial” (examples of non-commercial: school, cemetery, church). If a property was categorized as “Commercial” then additional survey questions related to the type of commercial activity and the conditions observed on site were answered. Eight thousand two hundred seventy-nine (8,279) parcels were found to be residential; one thousand eight hundred eight (1,808) were non-residential. One thousand forty (1,040) parcels exhibited evidence of commercial activity. After determining a site was Commercial, the next menu question asked the type of business. There were seven business categories specified in the menu that might indicate the presence of contamination on site, as well as a category called “Other”. If a site was “Other” then the surveyor manually entered the type of business into the digital data collector.

Parcels within the survey area that were ***not already listed*** in the three databases, and which matched the survey criteria we associated with the possibility of contamination, were identified and extracted from the field survey data. Field survey data describing each site was reviewed. If the data was incomplete, further investigation (onsite and/or digital) was conducted to obtain any missing data fields. Potential brownfield properties accounted for 7% of properties identified as Non-Residential and 11% of properties identified as Commercial.

Business Type

One hundred twenty-four (124) parcels, 1% of the total parcels surveyed, either matched the menu option businesses associated with contamination or were identified by surveyors as “Other” commercial uses (Figures 8, 9, Table 6). Analysis of parcels that were designated as “Other” (Figure 9) found additional current uses that might cause contamination (example: railroads), as well as new uses for sites that historically might have been contaminated (example: bodega opened on a previously industrial parcel). The current status of these potentially contaminated sites (address, lot/block data, activity (site active or non-active), and presence or absence of onsite structures is presented in Table 6, Figures 10, 11, 12.

Auto-related and railroad-related uses were responsible for 43% and 27%, respectively, of the potentially contaminated parcels (70% of the 124 locations).

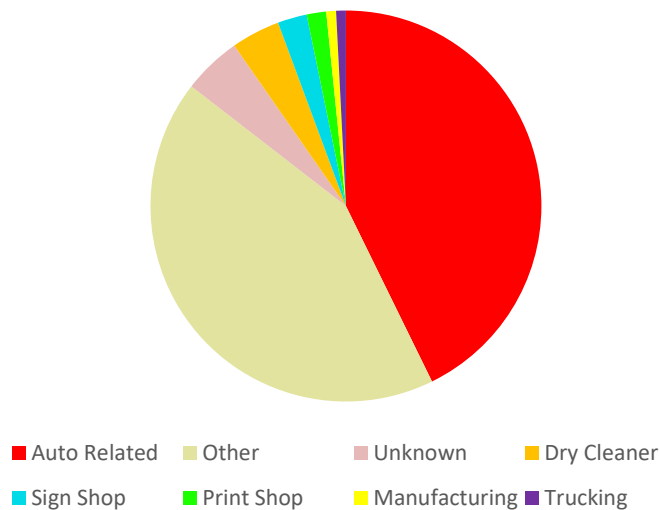


Figure 8. Proportion of businesses matching menu options potentially associated with activities that could lead to site contamination.

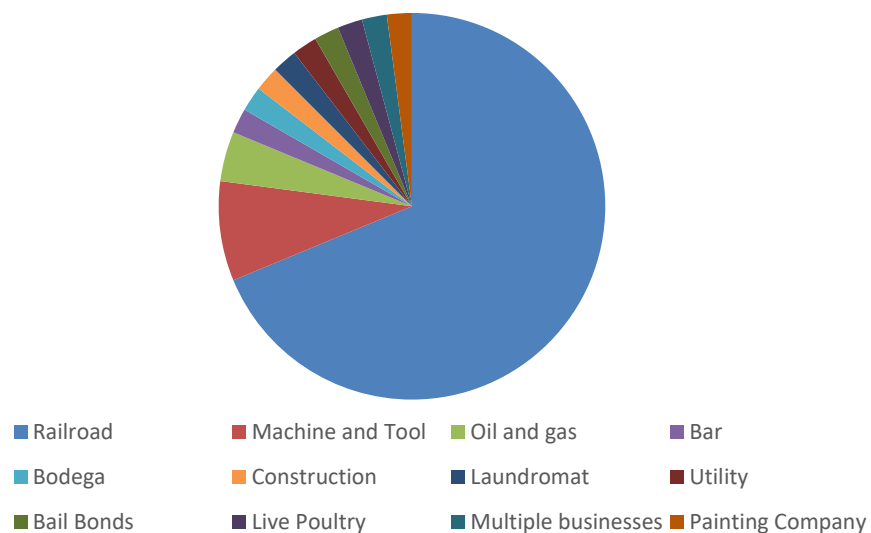


Figure 9. Proportion of Commercial properties identified as "Other" that may potentially be associated with current or historic activities which could cause site contamination.

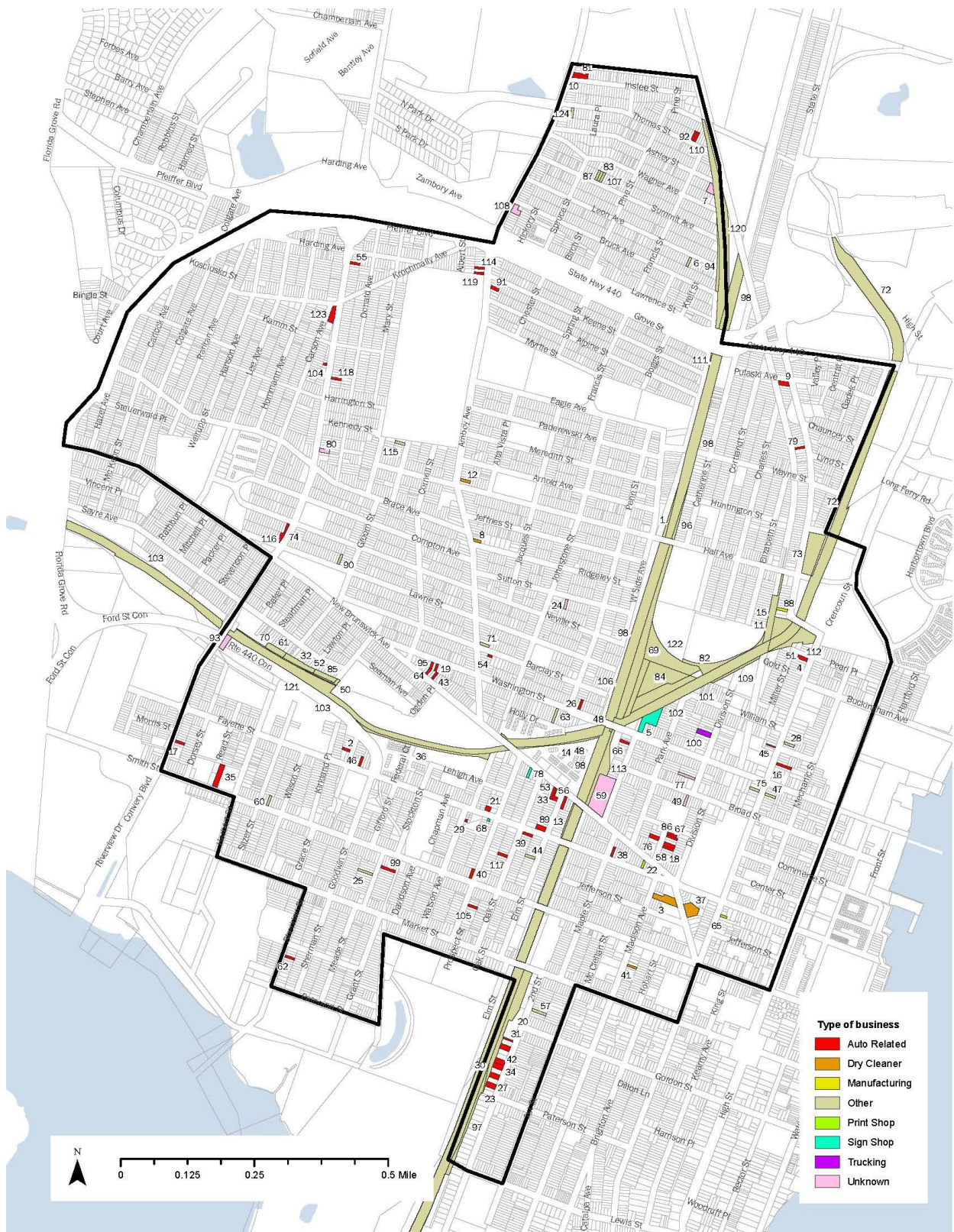


Figure 10. Map of all Commercial parcels that might be associated with current or historic contamination.

TABLE 6. Business Associated with Potential Contamination

MAP #	BLOCK	LOT	ADDRESS	BUSINESS TYPE	ACTIVITY	STRUCTURE
1	11	2.04	Not Available	Other - Railroad	Non-Active	No
2	106.01	14	361 MC GUIRE PL.	Auto Related	Active	Yes
3	124	12.01	167 NEW BRUNS. AVE	Dry Cleaner	Active	Yes
4	249	23.01	531 STATE ST.	Auto Related	Active	Yes
5	221	3	224 WASHINGTON ST.	Sign Shop	Active	Yes
6	435	38	3235 LEON AVE.	Other – Painting Company	Active	Yes
7	455	12	317 ASHLEY ST.	Not Available	Active	Yes
8	271	8	582-584 AMBOY AVE.	Dry Cleaner	Active	Yes
9	360	36	785 STATE ST.	Auto Related	Active	Yes
10	449	4	984 Amboy Ave	Auto Related	Active	Yes
11	108	4.01	Not Available	Other - Railroad	Non-Active	No
12	324	21	634 Amboy Ave.	Dry Cleaner	Active	Yes
13	11	1.13	Not Available	Other - Railroad	Active	No
14	108	2	Not Available	Other - Railroad	Non-Active	No
15	228.04	3.02	GOLD STREET	Utility power line	Active	No
16	231	19	448 STATE ST.	Auto Related	Active	Yes
17	101.04	41	320 CONVERY BLVD.	Auto Related	Non-Active	Yes
18	148	26	374 NEW ST.	Auto Related	Active	Yes
19	173	20	389 WASHINGTON ST.	Auto Related	Active	Yes
20	11	1.07	MARKET STREET	Other - Railroad	Active	No
21	159	1.01	310 FAYETTE ST.	Auto Related	Active	Yes
22	152	18	187 NEW BRUNS. AVE.	Print Shop	Active	Yes
23	36	2	141 Second St.	Auto Related	Active	No
24	212	37	311 SUTTON ST.	Not Available	Non-Active	No
25	74	21	277 Betrand Ave	Middlesex County road department	Active	Yes
26	167	3	274 WASHINGTON ST.	Auto Related	Active	Yes
27	36	4	145 Second St.	Auto Related	Active	Yes
28	245	11	460 STATE ST.	Other - Bar	Non-Active	No
29	116	33.04	340 Watson St.	Auto Related	Active	Yes
30	36	6	143 Second St.	Auto Related	Active	Yes
31	36	12.01	173 Second St.	Auto Related	Active	Yes
32	182	47	Not Available	Other - Railroad	Non-Active	No
33	157	14	375 ELM ST.	Auto Related	Active	Yes
34	36	7	145 Second St.	Auto Related	Active	Yes
35	100	3.01	518 SMITH ST.	Auto Related	Active	Yes
36	108	1.01	600 ROUTE 440 CONNECTION	Other - Railroad	Non-Active	No
37	126	21.01	164 NEW BRUNS. AVE.	Dry Cleaner	Active	Yes

38	152	5	206 FAYETTE ST.	Auto Related	Active	Yes
39	118	28	348 OAK ST.	Auto Related	Active	Yes
40	116	10	307 Prospect St.	Auto Related	Active	Yes
41	59	25	276 MADISON AVE.	Dry Cleaner	Active	Yes
42	36	10	173 Second St.	Auto Related	Active	No
43	173	35	394 NEW BRUNS. AVE.	Auto Related	Active	Yes
44	118	19	331 ELM ST.	Other – Natural gas regulator station	Active	No
45	230	7.02	459 STATE ST.	Auto Related	Active	Yes
46	107	4	416 FAYETTE ST.	Auto Related	Active	Yes
47	233	29	426 STATE ST.	Other – Bail Bonds	Active	Yes
48	108	2.01	NEW BRUNS. AVE	Other - Railroad	Non-Active	No
49	149	22	171 BROAD ST.	Not Available	Active	Yes
50	182	47.02	Not Available	Other - Railroad	Non-Active	No
51	108	4	Not Available	Other - Railroad	Active	No
52	108	1.07	Not Available	Other - Railroad	Non-Active	No
53	157	15	267 NEW BRUNS. AVE.	Auto Related	Active	Yes
54	169	1.02	353 BARCLAY ST.	Auto Related	Active	Yes
55	379.05	13	774 Convery Blvd.	Auto Related	Active	Yes
56	156	4	257 New Brunswick Ave.	Auto Related	Active	Yes
57	42	46	218 SECOND ST.	Other – Oil and gas	Active	Yes
58	148	25	376 NEW ST.	Auto Related	Active	Yes
59	154	1.01	244 NEW BRUNS. & EAST AVE	Not Available	Non-Active	No
60	104.02	3	470 SMITH ST.	Other - Construction	Non-Active	Yes
61	182	48	523 SAYRE AVE. REAR	Other – Railroad	Non-Active	No
62	85	4	194 SHERIDAN ST.	Auto Related	Active	Yes
63	166	11	285 WASHINGTON ST.	Other - Bodega	Active	Yes
64	173	32	402 NEW BRUNS. AVE.	Auto Related	Active	Yes
65	127	35	338 STATE ST.	Print Shop	Active	Yes
66	222	8	427-433 EAST AVE.	Auto Related	Active	Yes
67	148	22	380 NEW ST.	Auto Related	Active	Yes
68	116	30.03	311 Fayette St.	Sign Shop	Active	Yes
69	11	2.03	Not Available	Other - Railroad	Non-Active	No
70	108	1.06	Not Available	Other - Railroad	Non-Active	No
71	208	8	460 AMBOY AVE.	Other - Laundromat	Active	Yes
72	108	5	Not Available	Other – Railroad	Active	No
73	356.01	1	626-662 STATE STREET	Other – Multiple businesses	Active	Yes
74	195	17	515 CONVERY BLVD.	Auto Related	Non-Active	Yes
75	229	9	425 STATE ST.	Dry Cleaner	Active	Yes
76	150	11	377 NEW ST.	Auto Related	Active	Yes
77	224	13	425 Division St	Not Available	Active	Yes

78	158	20	291 NEW BRUNS AVE.	Sign Shop	Active	Yes
79	360	13	735 STATE ST.	Auto Related	Active	Yes
80	283	33	612 CONVERY BLVD.	Not Available	Non-Active	Yes
81	449	3	984 AMBOY AVE.	Auto Related	Active	Yes
82	108	3.02	Not Available	Other - Railroad	Non-Active	No
83	441	7	410 Summit Ave.	Other – Machine and Tool	Active	No
84	219	1	CHARLES ST. REAR	Other – Rail Related	Non-Active	No
85	182	46	Not Available	Other - Railroad	Non-Active	No
86	148	21	384 NEW ST.	Auto Related	Active	Yes
87	441	6	410 Summit Ave.	Other – Machine and Tool	Active	Yes
88	255	3	599 STATE ST.	Manufacturing	Active	Yes
89	157	1	266 FAYETTE ST.	Auto Related	Active	Yes
90	198	22	486 LAWRIE ST.	Other - Utility	Active	No
91	377	31	800 AMBOY AVE.	Auto Related	Active	Yes
92	453	14	344 THOMAS ST.	Auto Related	Active	Yes
93	108.03	1.08	Not Available	Unknown - Construction	Active	No
94	432	1.01	WEST SIDE AVE.	Other - Railroad	Active	No
95	173	22	391 WASHINGTON ST.	Auto Related	Active	Yes
96	11	2.05	Not Available	Other - Railroad	Non-Active	No
97	11	1.05	Not Available	Other - Railroad	Active	No
98	11	2	Not Available	Other - Railroad	Non-Active	No
99	73	34	284 BERTRAND AVE.	Auto Related	Active	Yes
100	225	14	463 DIVISION ST.	Trucking	Active	Yes
101	108	3	Not Available	Other - Railroad	Active	No
102	219	1.01	REAR OF PARK & WILLIAM	Other - Railroad	Non-Active	No
103	108	1	MAIN STM.	Other - Railroad	Non-Active	No
104	311	18	695 CONVERY BLVD.	Auto Related	Active	Yes
105	70	33	282 PROSPECT ST.	Auto Related	Active	Yes
106	219	5.02	WASHINGTON ST. REAR	Other - Railroad	Non-Active	No
107	441	8	410 Summit Ave.	Other – Machine and Tool	Active	No
108	400	13.01	858 AMBOY AVE.	Not Available	Non-Active	Yes
109	108	3.01	Not Available	Other - Railroad	Non-Active	No
110	453	15	340 THOMAS ST.	Auto Related	Active	Yes
111	365	1.02	CATHERINE ST.	Other - Railroad	Active	No
112	108	4.02	STATE ST.	Other - Railroad	Non-Active	No
113	11	2.01	SMITH ST.	Other - Railroad	Active	No
114	378.01	3.01	807 AMBOY AVE.	Auto Related	Active	Yes
115	277	14	645 Atlantic Ave.	Other – Machine Shop	Active	Yes
116	195	16	511 CONVERY BLVD.	Auto Related	Active	Yes
117	117	16	319 OAK ST.	Auto Related	Active	Yes
118	316	37	686 Convery Blvd.	Auto Related	Active	Yes
119	378.01	1	805 AMBOY AVE.	Auto Related	Active	Yes

120	432	1	MAIN ST GROVE CITY	Other - Railroad	Active	No
121	182	47.01	SAYRE AVE.	Other - Railroad	Non-Active	No
122	253	3	Not Available	Other - Railroad	Non-Active	No
123	310	4	714 CONVERY BLVD.	Auto Related	Active	Yes
124	447	29	954 Amboy AVE.	Other – Live Poultry	Non-Active	Yes

Site Activity

Where there was evidence of business activity on a site (11a), the parcel was designated as “Active” (Table 6). If the site was an overgrown parcel without a structure (Figure 11b), or if it appeared that the business was vacant/closed (11c), the parcel was designated as “Non-Active” (Table 6). For the purposes of this analysis, railroad property was designated as “Non-Active” (Figure 12). However, it is quite possible that some rail lines are still in use, and so railroad properties require an in depth review beyond the scope of this survey.

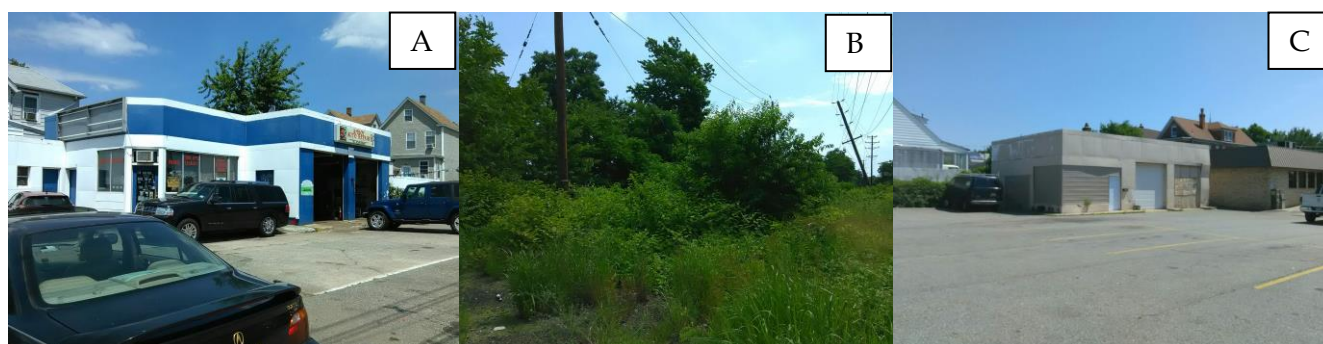


Figure 11. Examples of a surveyed A) Active business, b) Non-Active lot, and C) Non-Active business.

Structures

In addition to remediation costs associated with environmental contamination, there may be additional costs associated with disposal of onsite structures and buildings. Conversely, onsite structures may provide an opportunity for cost effective adaptive reuse options. Therefore, we mapped sites showing the presence and absence of onsite structures (Figure 13).

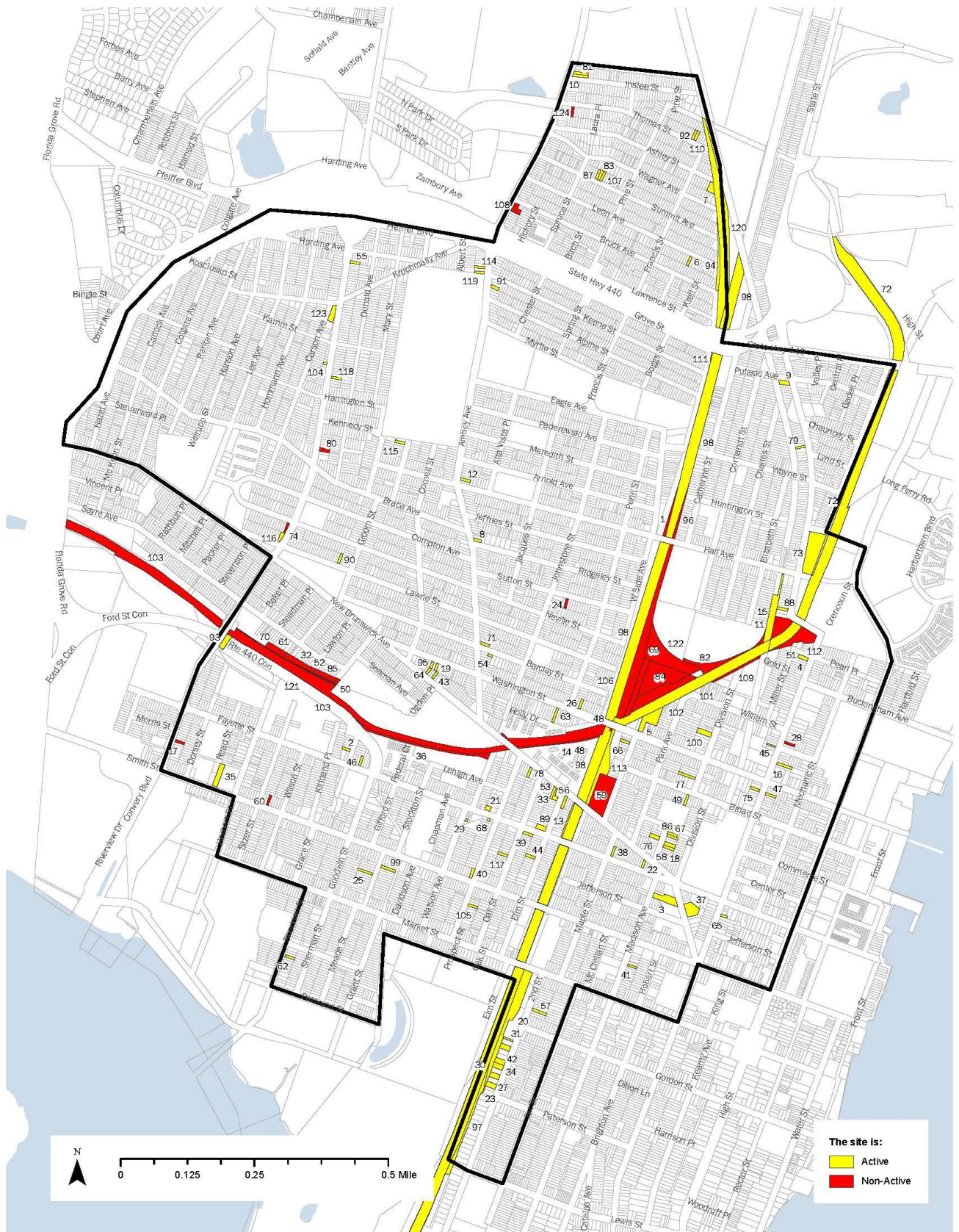


Figure 12. Map of potentially contaminated parcel activity status. Note: railroad property includes rail lines and railroad rights of way, which may or may not be currently in active use.

Evidence of Chemical Spills

The majority of spills, observed on 35 properties, were associated with auto-related businesses (65% of all properties with spills) (Table 7, Figure 14).

TABLE 7. Parcels Where Spills Were Observed.

ID	BLOCK	LOT	ADDRESS	4. Name of Business
2	106.01	14	361 MC GUIRE PL.	Portech Auto Works
4	249	23.01	531 STATE ST.	Sergio and Sons
7	455	12	317 ASHLEY ST.	Not Available
9	360	36	785 STATE ST.	H E K Machine Ink
16	231	19	448 STATE ST.	AR General MECHANIC LLC; Cruz Auto Repair
17	101.04	41	320 CONVERY BLVD.	Amboy Auto Radiator
18	148	26	374 NEW ST.	Chici Auto body, Gio's auto sales, F&J auto body
19	173	20	389 WASHINGTON ST.	M. Belem Motors
21	159	1.01	310 FAYETTE ST.	G.T Auto Tire
23	36	2	141 Second St.	Beato Auto Repair
27	36	4	145 Second St.	Unknown
29	116	33.04	340 Watson St.	Carballo Transmissions
30	36	6	143 Second St.	Ortiz Towing Service
31	36	12.01	173 Second St.	Santiago Tires Services
33	157	14	375 ELM ST.	DC AUTO BODY
34	36	7	145 Second St.	Luis Jr. Towing
35	100	3.01	518 SMITH ST.	Boss Audio and performance parts
38	152	5	206 FAYETTE ST.	Valdez Auto Sevice
42	36	10	173 Second St.	Road Runner II Towing and Services
43	173	35	394 NEW BRUNS. AVE.	unknown, probably Deepa Auto Body
46	107	4	416 FAYETTE ST.	JJ AUTOBODY
53	157	15	267 NEW BRUNS. AVE.	Moreno Auto Body, Victor custom Upholstery
56	156	4	257 New Brunswick Ave.	Brunswick Auto and Tries Service
58	148	25	376 NEW ST.	F&J Auto BODY
60	104.02	3	470 SMITH ST.	Hellenic Builders, LLC
62	85	4	194 SHERIDAN ST.	Not Available
64	173	32	402 NEW BRUNS. AVE.	Deepa Auto Body
66	222	8	427-433 EAST AVE.	Bobby'o's affordable auto body
67	148	22	380 NEW ST.	Not Available
74	195	17	515 CONVERY BLVD.	Alexa Motors
76	150	11	377 NEW ST.	FAYETTE MOTORS LLC
79	360	13	735 STATE ST.	White Cab Taxi
80	283	33	612 CONVERY BLVD.	Not Available

83	441	7	410 Summit Ave.	Evans Machine and Tool
86	148	21	384 NEW ST.	Cheche's Auto Services
89	157	1	266 FAYETTE ST.	AJ Autobody
90	198	22	486 LAWRIE ST.	Raritan Bay Medical Center
92	453	14	344 THOMAS ST.	Not Available
93	108.03	1.08	N/A	Joseph M. Sanzari, inc
95	173	22	391 WASHINGTON ST.	Deepa Auto Body
99	73	34	284 BERTRAND AVE.	Unitech autobody
100	225	14	463 DIVISION ST.	Hendry Bus Company
104	311	18	695 CONVERY BLVD.	Bobby O's Affordable Auto Sales
105	70	33	282 PROSPECT ST.	Auto Radiator sales and repair
107	441	8	410 Summit Ave.	Evans Machibe and Tool
108	400	13.01	858 AMBOY AVE.	Not Available
110	453	15	340 THOMAS ST.	Not Available
113	11	2.01	SMITH ST.	NJ TRANSIT
114	378.01	3.01	807 AMBOY AVE.	Associated Sales and Leasing
115	277	14	645 Atlantic Ave.	Not Available
116	195	16	511 CONVERY BLVD.	Amboy Auto Repair
117	117	16	319 OAK ST.	Not Available
119	378.01	1	805 AMBOY AVE.	Barry-Livres Foreign Auto Service Center
123	310	4	714 CONVERY BLVD.	Auto Gallery

Chemical Drums

Evidence of chemical drums was observed on eleven (11) properties (Table 8, Figures 15, 16). At some locations there was also evidence that these drums might be leaking (examples: Table 7, numbers 24, 27, 66, 80, 89, 90, 115). Field observations suggest that at least two of these sites (24 and 80) there might have individuals “squatting” onsite. We recommend that evaluation of these parcels be prioritized to address any conditions that may be endangering human and/or environmental health.

TABLE 8. Parcels Where Chemical Drums Were Observed

MAP #	BLOCK	LOT	ADDRESS	Name of Business
23	36	2	141 Second St.	Beato Auto Repair
24	212	37	311 SUTTON ST.	Not Available
27	36	4	145 Second St.	Not Available
28	245	11	460 STATE ST.	Latin Love Lounge
57	42	46	218 SECOND ST.	Tomko Oil to gas conversions, oil tank removal
66	222	8	427-433 EAST AVE.	Bobby'o's affordable auto body
80	283	33	612 CONVERY BLVD.	Not Available
89	157	1	266 FAYETTE ST.	AJ Autobody
90	198	22	486 LAWRIE ST.	Raritan Bay Medical Center
107	441	8	410 Summit Ave.	Evans Machibe and Tool
115	277	14	645 Atlantic Ave.	Not Available



Figure 15. Examples of sites where chemical drums were observed. Photo numbers match the location ID numbers in the Figure 16 map and Table 8.

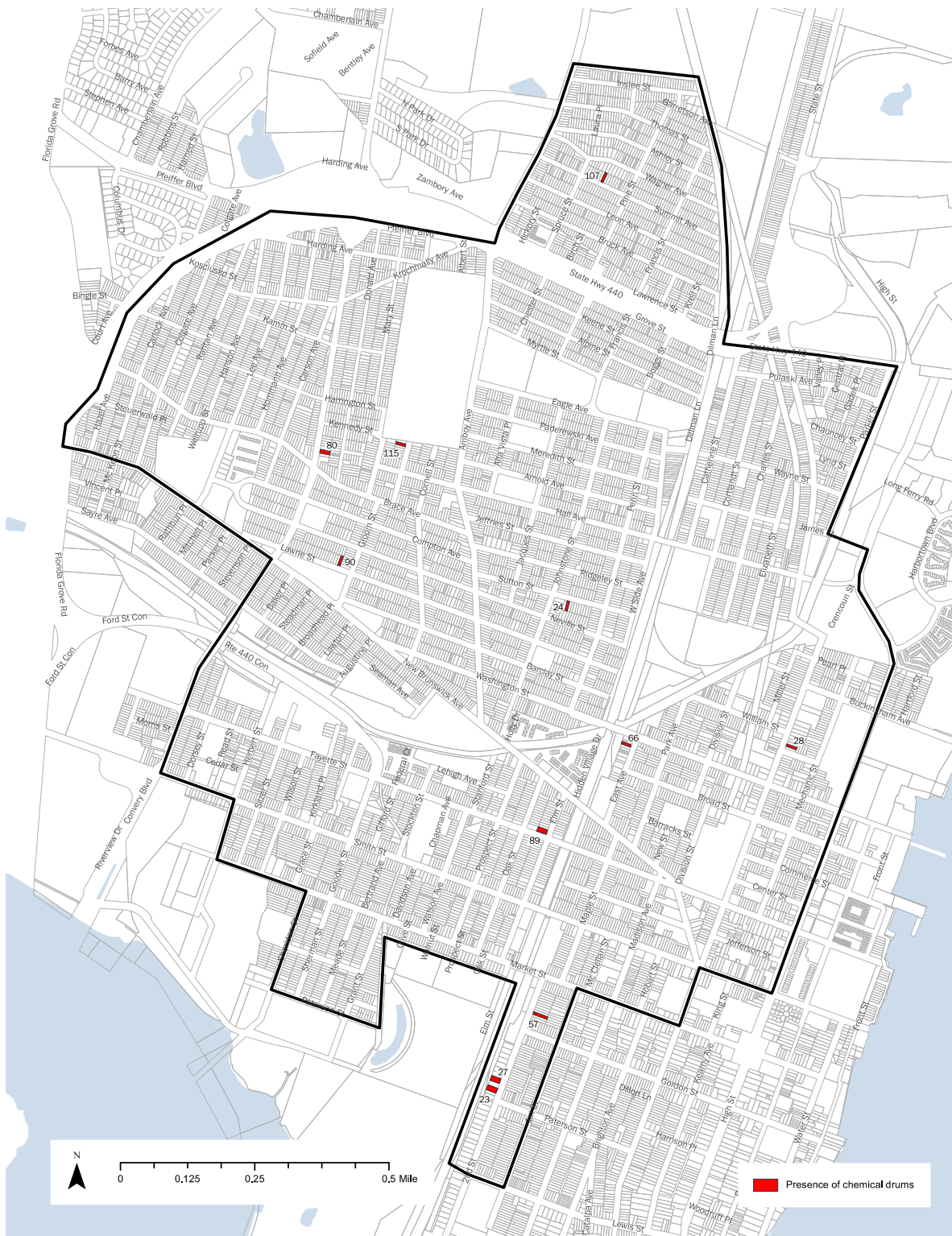


Figure 16. Parcels with chemical drums onsite.

VI. RECOMMENDED NEXT STEPS

This field survey allowed the project team (MCIA, the City of Perth Amboy, and CUES) to gain a better understanding of both identified contaminated and potential brownfield sites within Perth Amboy. Although large waterfront brownfield parcels are already targeted for remediation and redevelopment, smaller parcels in residential areas have not been addressed. The survey also found discrepancies within the known brownfield databases with respect to address and possibly, business ownership, data.

In order to develop a process to correct database discrepancies, the project team met with representatives from NJDEP (responsible for the KCSL and data sent to USEPA for inclusion in the RCRA database), the NJ Office of Planning Advocacy (responsible for SiteMart data), and the NJ Office of GIS on October 29, 2016. Also present at this meeting were representatives of Sustainable Jersey, a non-governmental organization that encourages municipal volunteer activities, in this case, inventorying and prioritizing brownfield remediation. We are awaiting recommendations from the State of New Jersey regarding how data obtained from a reliable survey (such as the Rutgers field survey) might be incorporated into the three official databases to increase accuracy. We will continue to follow up with these three entities to support developing a process that can correct obvious inaccuracies in the NJ State databases.

However, the survey database information is currently usable at the municipal level, even if no changes have yet been made in the state or federal databases. We recommend the City of Perth Amboy take the following steps based on the results of this study:

- Initiate an immediate investigation of the sites where chemical drums and spills were observed to ensure protection of human and environmental health.
- Create a City of Perth Amboy strategy to investigate identified parcels where active commercial activities suggest the potential for site contamination. Ensure all appropriate regulations and codes are enforced to prevent possible soil and/or water contamination.
- Sites identified as non-Active are potentially underutilized in their commercial, residential, or recreational use. The sites should be prioritized in Perth Amboy planning initiatives to bring these parcels into more productive uses.
- Investigate all identified commercial non-Active sites to determine if contamination is present and initiate appropriate actions required for sites that require cleanup.
- Compare business name discrepancies with local tax information to ascertain database site ownership is correct, since a thorough understanding of site ownership is fundamental to site management and remediation.
- Review parcels identified as railroad properties to determine if unused sections of rail can be converted to public use, such as a Rails to Trails program.
- Continue to work with NJDEP to develop a process to incorporate reliable data corrections into the state databases.

- Signs posted by an LSRP were observed at only two (2) locations. If a brownfield site is under LSRP supervision, the 2012 SRRRA regulations require that signs be visible with LSRP contact information. We suggest that Perth Amboy coordinate with NJDEP to review sites currently undergoing remediation/monitoring to ensure that the required signs are posted.

VII. CONCLUSION

The collaboration between Middlesex County Improvement Authority, the City of Perth Amboy, and CUES has produced an accurate survey of sites currently listed in the Known Contaminated Site List, Site Mart, and the USEPA RCRA databases. Additionally, over one hundred properties that may be contaminated due to current or previous commercial activities have been identified, and further investigation can now be initiated by the City of Perth Amboy.

Although large brownfield sites in older urban municipalities are often well known, addressing smaller, less obvious contaminated parcels is critical to bring underutilized properties into better use, and to protect human and environmental health. The field survey method developed for this study provided an accurate and cost effective approach to identify such properties, and has provided MCIA and Perth Amboy with data to initiate investigations required to support realization of the economic and social potential of these sites.

APPENDIX I. DATA DICTIONARY

Perth Amboy Brownfield Survey Data Dictionary*

Data	Source
NJ Parcel Data	https://njgin.state.nj.us/NJ_NJGINExplorer/IW.jsp?DLayer=Parcels%20by%20County/Muni
MOD IV Data	http://oprs.co.monmouth.nj.us/oprs/External.aspx?ild=12
EPA RCRA	https://www.epa.gov/enviro/geospatial-data-download-service
NJDEP KCSL	http://njogis.newjersey.opendata.arcgis.com/datasets/6f11f6204ffa40a09527c8205aec4425_7
NJ Brownfield Site Mart	http://www.nj.gov/state/planning/spc-research-resources-gis.html

*All data was accessed July, 2016

APPENDIX II. SURVEY QUESTIONNAIRE

Perth Amboy Potential Brownfield Survey Menu

1. Is the property residential?
 - a. Yes
 - b. No
2. If #1 is No, is site currently or in the past commercially (or industrially) used?
 - a. Yes
 - b. No
3. Type of business
 - a. Gas Station
 - b. Dry Cleaner
 - c. Auto-related
 - d. Trucking
 - e. Printing
 - f. Sign Shop
 - g. Manufacturing
 - h. Unknown
 - i. Other (ENTER)
4. Name of Business
 - a. ENTER
5. The site is:
 - a. Active
 - b. Vacant
 - c. Abandoned
6. Do current or traces of previous site uses suggest the possible presence of contamination?
 - a. Yes
 - b. No
7. Is the site listed in the USEPA RCRA database?
 - a. Yes
 - b. No
8. Is the site ID, address, and name accurately listed in the SiteMart database?
 - a. Yes
 - b. No
 - c. Correction (ENTER)

9. Is the site ID, address and name accurately listed in the Known Contaminated Site List database?
 - a. Yes
 - b. No
 - c. Correction (ENTER)
10. Is there a sign listing an LSRP?
 - a. Yes
 - b. No
11. If #9 is Yes, what is the name of the LSRP?
 - a. ENTER
12. 11b. If #9 is Yes, what is the DEP PI number?
 - a. ENTER
13. Does the site have buildings/structures?
 - a. Yes
 - b. No
14. If #11 is Yes, Existing Site Conditions – Boarded up windows/doors?
 - a. Yes
 - b. No
15. If #11 is Yes, Existing Site Conditions – Exposed wires/structural deficiencies?
 - a. Yes
 - b. No
16. Existing Site Conditions – Weeds 2 ft or taller
 - a. Yes
 - b. No
17. Existing Site Conditions – Shrubs
 - a. Yes
 - b. No
18. Existing Site Conditions – Trees
 - a. Yes
 - b. No
19. Existing Site Conditions – Evidence of Dumping?
 - a. Yes
 - b. No

20. Existing Site Conditions – Presence of chemical drums?

- a. Yes
- b. No

21. Existing Site Conditions – Evidence of chemical spill/oily material?

- a. Yes
- b. No

22. Existing Site Conditions – Unusual odors?

- a. Yes
- b. No

23. Existing Site Conditions – Evidence of squatters?

- a. Yes
- b. No

APPENDIX III. NON-MATCHING DATA POINTS

Properties listed in this database not readily associated with a specific tax map parcel.

Database	BUSINESS NAME	ADDRESS
SiteMart	102 Smith Street	102 Smith Street
RCRA	AMBOY TERMINALING CO	560 STATE STREET
RCRA	CELOTEX CORP SLF	MARKET STREET AND HERBERT STREET
RCRA	CHEMAGE PRODUCTS INC	501 HIGH STREET
SiteMart	Chevron	GARRETSON AVE.
SiteMart	CITY OF PERTH AMBOY	BUCKINGHAM AVE
KCSL	CONSTANZA INC	305 SMITH ST AKA 291 PROSPECT ST
RCRA	DAH CHONG HONG TRADING CORP	MAIN & BROADWAY
RCRA	DESPO CHEMICALS INTERNATIONAL	400 RECTOR ST
RCRA	ENGLERT METALS CORP	393 FRONT ST
RCRA	FISCHER MARINE REPAIR CORP	408 FRONT ST
RCRA	H PRANG TRUCKING CO INC	112 NEW BRUNSWICK AVE
KCSL	HENIA INDUSTRIES	500 MECHANIC ST
SiteMart	HENIA INDUSTRIES	500 MECHANIC ST
RCRA	HENIA INDUSTRIES INC	500 MECHANIC STREET
SiteMart	Maurer Rd & Amboy Avenue	SPA SPRING RD.
KCSL	MECHANIC ST REALTY	501 MECHANICS ST
RCRA	MECHANIC STREET REALTY CORP	BUCKINGHAM & HIGH STREET
RCRA	METUCHEN CAPACITORS INC	420 PARK AVE
RCRA	MULTIPLE PROCESSORS	FOOT OF SECOND ST
RCRA	NEW JERSEY TURNPIKE AUTHORITY	RT 35
RCRA	NJDEP BCE	AMBOY AVE
RCRA	PERTH AMBOY CITY	441 HIGH ST
KCSL	PERTH AMBOY CITY COAL GAS (ETG)	LINDEN ST & SADOWSKI PKWY
RCRA	PERTH AMBOY CITY OF	500 MECHANIC ST - BOTTOM FLOOR
RCRA	PETRO CHEM WASTE SERVICES INC	900 STATE ST SUITE A
RCRA	PORT AUTH NY/NJ	OUTERBRIDGE CROSSING
RCRA	ROYAL LINE - MERC	119 RTE 184
RCRA	SHELL OIL CO	RTE 184 EB
KCSL	STOLT TERMINAL	920 STATE ST
RCRA	TEXAS EASTERN PIPELINE M&R STATION	STATE STREET
KCSL	TRI STATE SHIP REPAIR & DRY DOCK CORP	408 FRONT ST
RCRA	TRI-STATE SHIPPING & DRY DOCK CO	408 FRONT ST - FOOT OF
RCRA	US NAVY - SUPERVISOR OF SHIPBUILDING	408 FRONT ST PO BOX 1517 BAY 2
RCRA	VELASCO PROPERTY FORMER	460 HIGH ST
RCRA	VITAL MOBILE CARE INC	RTE 9 N & RTE 35
SiteMart	Waterfront North of Outerbridge	PARKER ST.
RCRA	WHITE MARINE CONTRACTING INC	501 HIGH ST